

AMENDMENT UNDER 37 CFR § 1.111
Application No. 09/903,476

IN THE CLAIMS:

1-4 (Withdrawn)

5-12 (Cancelled)

13. (Previously Presented) A process for alkylating an aromatic compound comprising:

contacting an alkylatable aromatic compound and an alkylating agent with an alkylation catalyst comprising a molecular sieve under alkylation conditions; and

when said alkylation catalyst has become at least partially deactivated, contacting said alkylation catalyst with an oxygen-containing gas at a temperature of about 120 to about 600°C; and then

contacting the oxygen treated alkylation catalyst with an aqueous medium selected from the group consisting of ammonium nitrate solution and ammonium carbonate solution.

14. (Previously Presented) The process of claim 13 wherein contacting the oxygen treated catalyst with the aqueous medium is conducted in the liquid phase.

15. (Previously Presented) The process of claim 13 wherein the alkylating agent includes an alkylating aliphatic group having 1 to 5 carbon atoms.

16. (Previously Presented) The process of claim 13 wherein the alkylating agent is ethylene or propylene and the alkylatable aromatic compound is benzene.

17. (Previously Presented) The process of claim 13 wherein the molecular sieve of the alkylation catalyst is MCM-22, PSH-3, SSZ-25, MCM-36, MCM-49, MCM-56, faujasite, mordenite or zeolite beta.

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18. (Previously Presented) The process of claim 13 further including calcining the aqueous medium contacted catalyst at a temperature of about 25 to about 600°C for a period of about 10 minutes to about 48 hours.

19. (Currently Amended) A process for alkylating an aromatic compound to produce a mono-alkylaromatic compound, said process comprising:

contacting an alkylatable aromatic compound and an alkylating agent with an alkylation catalyst comprising a molecular sieve under alkylation conditions; and

when said alkylation catalyst has become at least partially deactivated, contacting said alkylation catalyst with an oxygen-containing gas at a temperature of about 120 to about 600°C; and then

contacting the oxygen treated alkylation catalyst with an aqueous medium, wherein the molecular sieve of the alkylation catalyst is PSH-3, SSZ-25, MCM-22, MCM-36, MCM-49, MCM-56, faujasite, mordenite or zeolite beta.

20. (Previously Presented) The process of claim 19 wherein contacting the oxygen treated catalyst with the aqueous medium is conducted in the liquid phase.

21. (Previously Presented) The process of claim 19 wherein the alkylating agent includes an alkylating aliphatic group having 1 to 5 carbon atoms.

22. (Previously Presented) The process of claim 19 wherein the alkylating agent is ethylene or propylene and the alkylatable aromatic compound is benzene.

23. (Previously Presented) The process of claim 19 further including calcining the aqueous medium contacted catalyst at a temperature of about 25 to about 600°C for a period of about 10 minutes to about 48 hours.

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24 (Cancelled)

25. (Previously Presented) The process of claim 5-27 wherein mono-selectivity of the oxygen treated alkylation catalyst is increased in the step of contacting said oxygen treated alkylation catalyst with an aqueous medium.

26. (Previously Presented) The process of claim 19 wherein the aqueous medium is ammonium nitrate solution, ammonium carbonate solution or acetic acid solution.

27. (Currently Amended) A process for alkylating an aromatic compound to produce a mono-alkylaromatic compound, said process comprising:

contacting an alkylatable aromatic compound and an alkylating agent with an alkylation catalyst comprising a molecular sieve under alkylation conditions; and

when said alkylation catalyst has become at least partially deactivated, at least partially restoring alkylation activity of said alkylation catalyst by contacting said alkylation catalyst with an oxygen-containing gas at a temperature of about 120 to about 600°C; and then

increasing mono-selectivity ~~and/or further increasing alkylation activity~~ of said alkylation catalyst by contacting the oxygen treated alkylation catalyst with an aqueous medium.

28. (Previously Presented) The process of claim 27 wherein the step of contacting the oxygen treated catalyst with the aqueous medium is conducted in the liquid phase.

28. (Previously Presented) The process of claim 27 wherein the alkylating agent includes an alkylating aliphatic group having 1 to 5 carbon atoms.

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30. (Previously Presented) The process of claim 27 wherein the alkylating agent is ethylene or propylene and the alkylatable aromatic compound is benzene.
31. (Previously Presented) The process of claim 27 wherein the molecular sieve of the alkylation catalyst is MCM-22, PSH-3, SSZ-25, MCM-36, MCM-49, MCM-56, faujasite, mordenite or zeolite beta.
32. (Previously Presented) The process of claim 27 wherein said aqueous medium is ammonium nitrate solution, ammonium carbonate solution or acetic acid solution.
33. (Previously Presented) The process of claim 27 wherein contacting the catalyst with the aqueous medium is conducted at a temperature of about 15 to about 120°C for a period of about 10 minutes to about 48 hours.
34. (Previously Presented) The process of claim 27 further including calcining the aqueous medium contacted catalyst at a temperature of about 120 to about 600°C for a period of about 10 minutes to about 48 hours.
35. (Previously Presented) The process of claim 13 wherein contacting the alkylatable aromatic compound and an alkylating agent with an alkylation catalyst is conducted in the liquid phase.
36. (Previously Presented) The process of claim 19 wherein contacting the alkylatable aromatic compound and an alkylating agent with an alkylation catalyst is conducted in the liquid phase.
37. (Previously Presented) The process of claim 27 wherein contacting the alkylatable aromatic compound and an alkylating agent with an alkylation catalyst is conducted in the liquid phase.